

09/164,216

Response to Office Action mailed February 7, 2002

F1
Epid.

a plurality of second diodes connected to the pads so that each second diode is connected to a pad and a positive line.

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45. (Amended) The chip of claim 15 wherein the ESD positive lines are never connected to a steady voltage source.

Please add the following new claims:

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--51. A semiconductor chip having a substrate of a first conductivity type, the chip comprising:

a plurality of pads;

an electrostatic discharge (ESD) negative ring;

a plurality of ESD positive lines, the plurality of positive lines not being electrically connected to each other;

a plurality of ESD switches connected to the ESD positive lines and the ESD negative ring so that each positive line is connected to the negative ring via an ESD switch, a switch of the plurality of ESD switches passing a current from a positive line to the negative ring when a voltage on the positive line rises at a predetermined rate; — ?

F3

a plurality of first diodes connected to the pads so that each first diode is connected to a pad and the negative ring; and

a plurality of second diodes connected to the pads so that each second diode is connected to a pad and a positive line, a second diode having a reverse breakdown voltage, the reverse breakdown voltage of a switch being less than the reverse breakdown voltage of the second diode.

52. The chip of claim 51 wherein the switches block a current from flowing from the positive line to the negative ring when a voltage on the positive line rises at a predefined rate that is different from the predetermined rate.

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53. ~~The chip of claim 51 wherein the second diodes are forward biased when the voltage on the positive line rises at the predefined rate.~~

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54. The chip of claim 51 wherein none of the plurality of positive lines encircles the periphery of the chip.

55. The chip of claim 51 wherein a positive line is connected to the negative ring via a plurality of ESD switches.

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56. ~~The chip of claim 51 wherein the ESD switches are not connected to a pad.--~~
